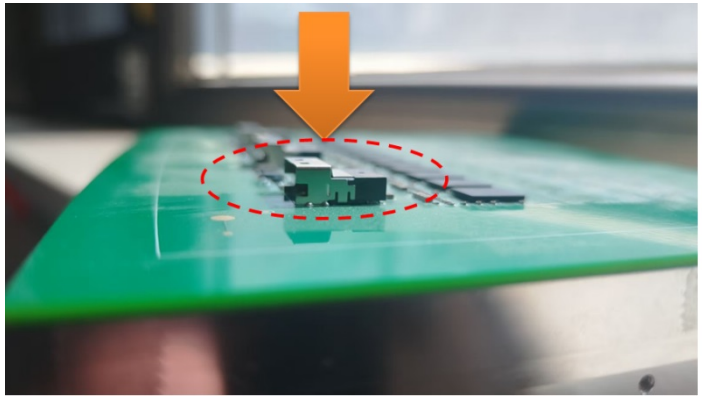
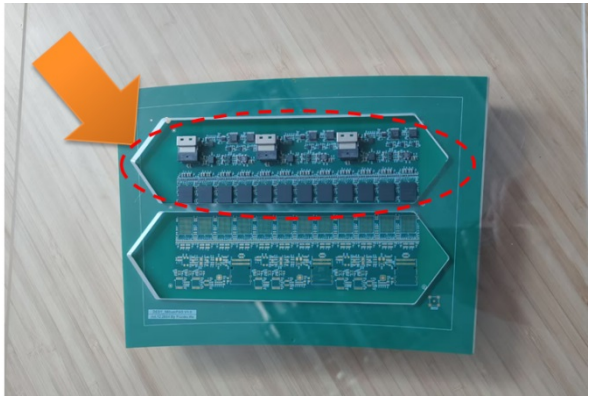
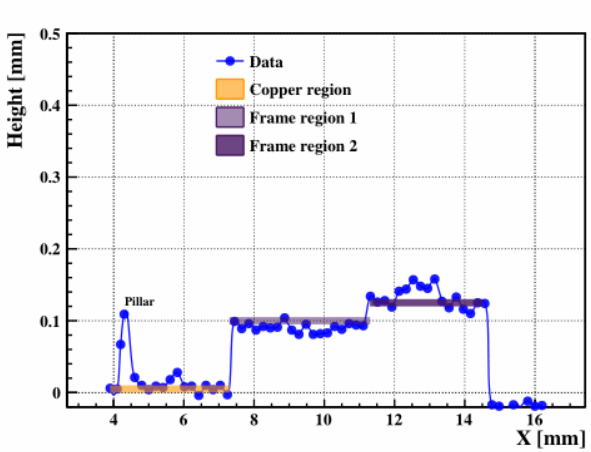
- **Status of TPC module with TEPIX readout R&D**

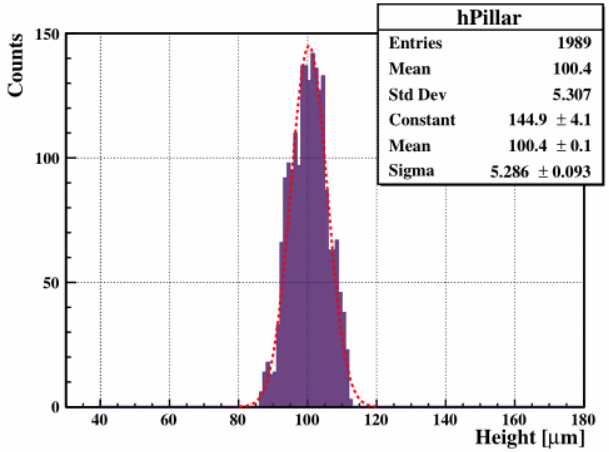
High granularity readout: Production of TPC module

- **Key issues to address #1**
  - Development of the pillar is constrained by the **height** of the transmission interface
  - After three rounds of process optimization, this issue **has been resolved** using flat-plate pressing



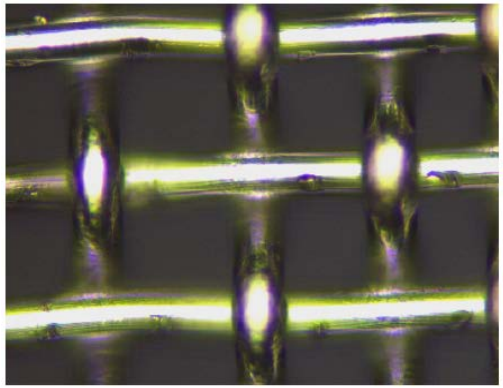




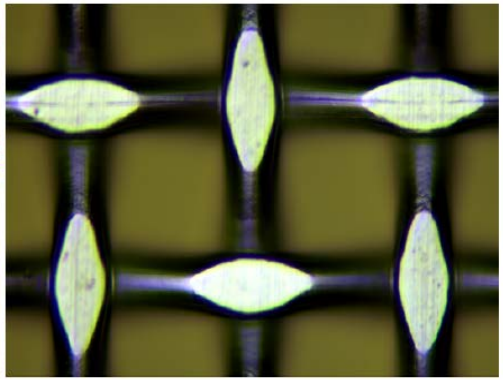


High granularity readout: Production of TPC module

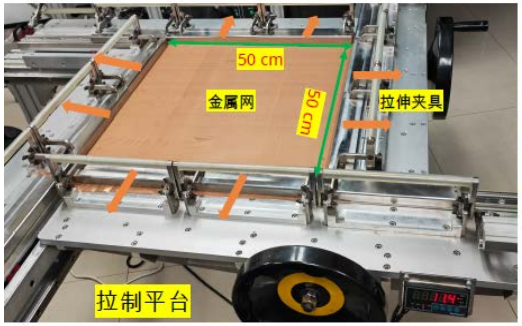
- **Key issues to address #2**
  - Stainless steel wire mesh stretching and rolling are optimization
  - **Improved detector gain**, resolution and overall performance



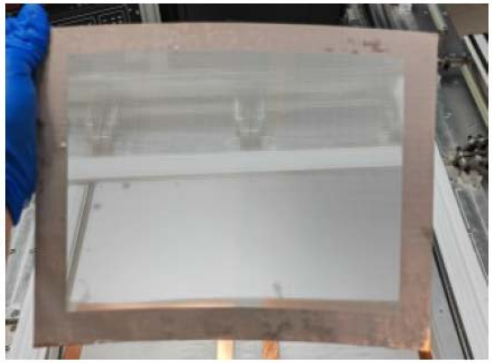
(a) 未辊压的不锈钢网



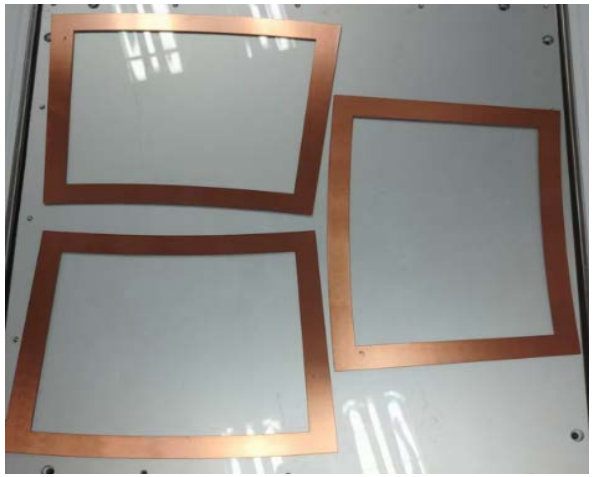
(b) 辊压后的不锈钢网



(c) 不锈钢网拉制平台

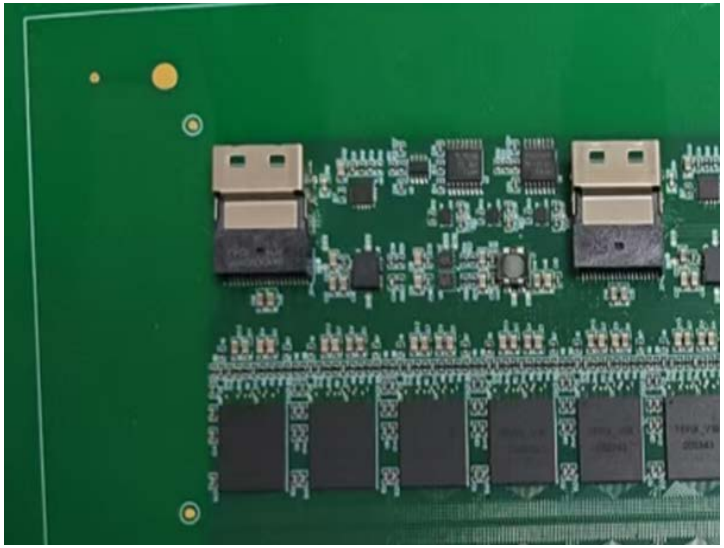


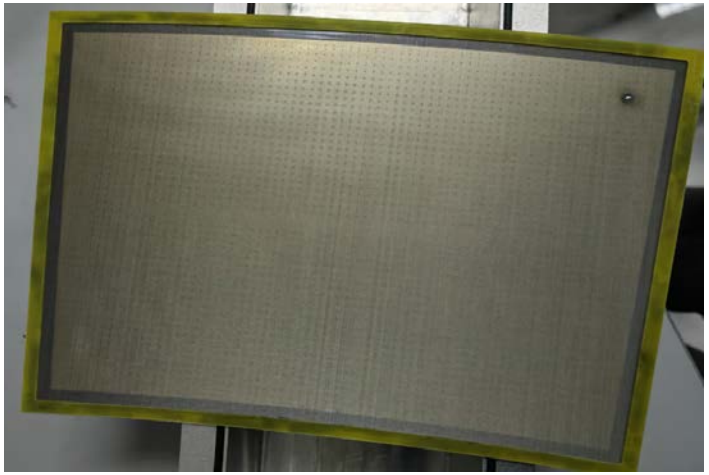
(d) 拉制后的钢网

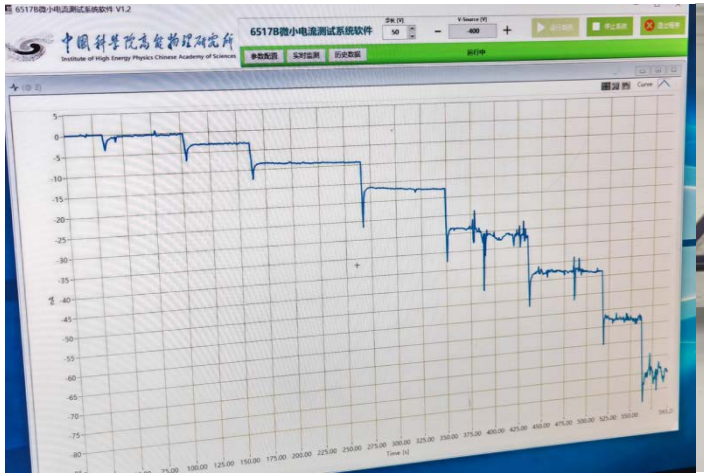


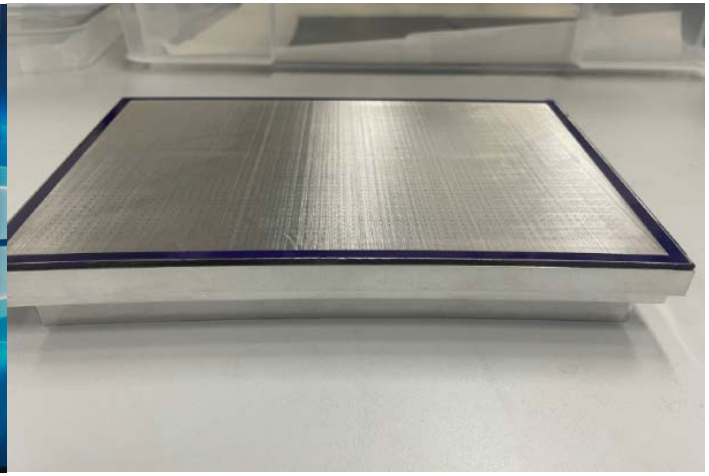
High granularity readout: Micromegas development

- **Achievements:**
  - R&D on high granularity readout PCB board
    - 12-layer PCB inner routing, surface gold-plated flat finish
    - Top layer with Micromegas, bottom layer with the pixel readout chips



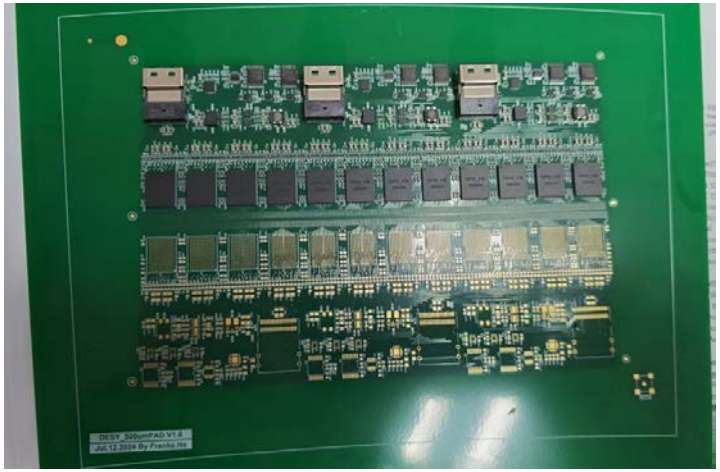


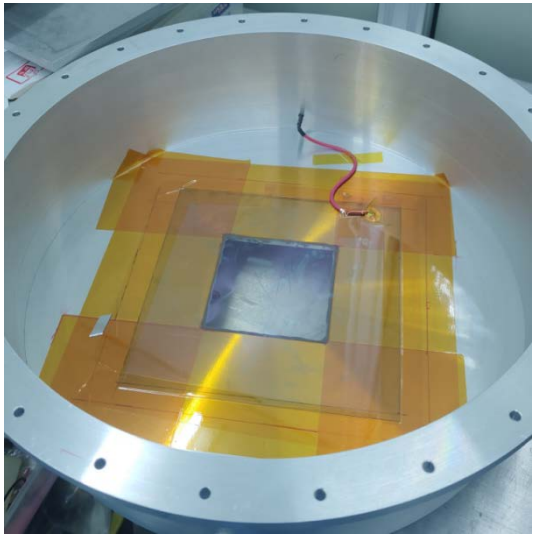


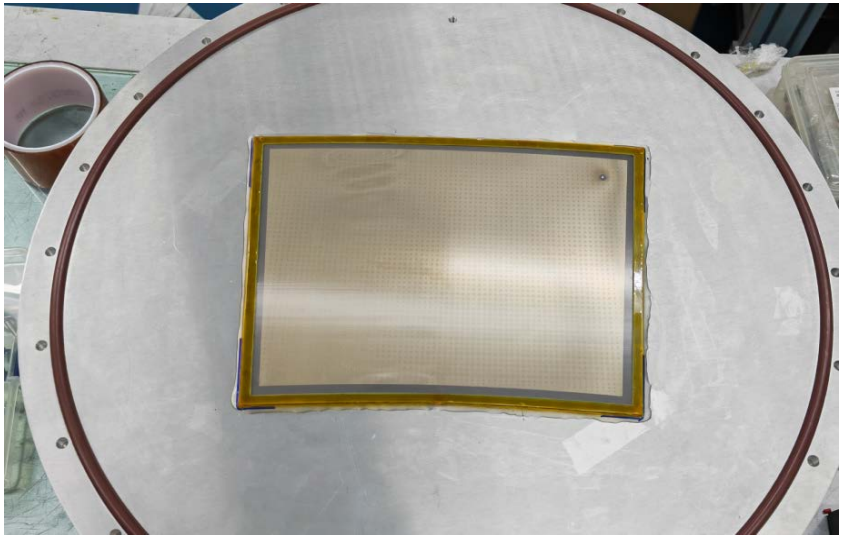


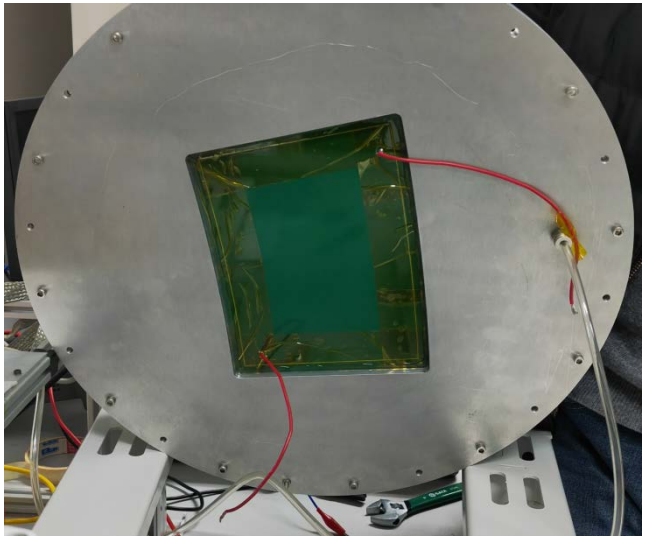
High granularity readout: Micromegas detector tests

- Detector optimization completed
- Test chamber fabrication completed
- Readout system & preliminary electronics prepared with Tsinghua
- Detector installation & gas tests in progress









Fe-55 spectrum of TPC module

- Achievement of TPC module:
  - Used Fe-55 source to acquire energy spectrum on mesh; energy spectra obtained through the small pixel readout and the two results are consistent.
  - Micromegas detector gain measured in T2K gas — good gain linearity achieved
  - TPC module with TEPIX v1 testing ongoing and validation